TAGORE INTERNATIONAL SCHOOL
EAST OF KAILASH, NEW DELHI

WEEKLY TEST-II (2026 - 2027)
CLASS – X
MATHEMATICS
SET- 1

Date: 10.07.2026
No. of pages: 3

Duration: 1 Hour 15 minutes
M. Marks: 35

GENERAL INSTRUCTIONS

1. All questions are compulsory
2. This question paper has 4 sections, A, B, C and D.
3. Section A has **5 MCQs** and **1 assertion and reasoning** carrying **1 mark** each.
4. Section B has **4 questions** of **2 marks** and **4 questions** of **3 marks**.
5. Section C has **1 case study-based** question of **4 marks.**
6. Section D has **1 long answer type** question of **5 marks.**

SECTION –A

1. Which of the following equations is a quadratic equation? (1 mark)

(a) $x^2 + 1 = (x-1)^2$ (b) $(x + \sqrt{x})^2 = 2x\sqrt{x}$

(c) $x^3 + 3x^2 = (2x-1)^3$ (d) $(x+1)(x-1) = (x+1)^2$

2. The 11th and 13th term of an AP are 39 and 45, respectively. What is the common difference of the AP? (1 mark)

(a) 42 (b) 21 (c) 6 (d) 3

3. If in two triangles DEF and PQR, $\angle D = \angle Q$ and $\angle R = \angle E$, then which of the following statements are true? (1 mark)

$(i)\ \frac{EF}{PR} = \frac{DF}{PQ}$ $(ii)\ \frac{DE}{PQ} = \frac{EF}{RP}$ $(iii)\ \frac{DE}{QR} = \frac{DF}{PQ}$ $(iv)\ \frac{EF}{RP} = \frac{DE}{QR}$

Choose the correct option from the following

(a) (i), (ii) and (iii) (b) (i), (iii) and (iv)

(c) (i) and (ii) (d) (ii), (iii) and (iv)

Three numbers in AP have the sum 30. What is its middle term? (1 mark)

(a) 4 (b) 10 (c) 16 (d) 8

5. If 'p' is a root of the quadratic equation $x^2 - (p+q)x + k = 0$, then the value of 'k' is: (1 mark)

(a) p (b) q (c) $p+q$ (d) pq

6. DIRECTION: In the following question, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option. (1 mark)

Assertion: 5, 10, 15 are three consecutive terms of an AP.
Reason: If a, b and c are three consecutive terms of an AP then 2b = a + c.

a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
b) Both Assertion and Reason are true and Reason is not the correct explanation of Assertion.
c) Assertion is true but Reason is false.
d) Assertion is false but Reason is true.

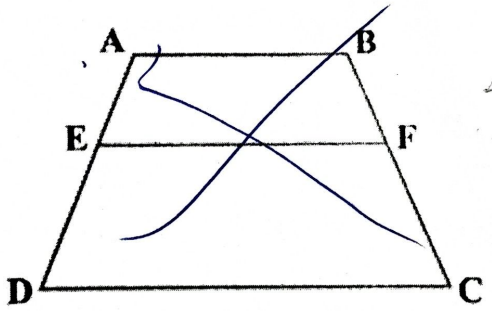
SECTION –B

7. Find the value of m for which the quadratic equation $(m-1)x^2 + 2(m-1)x + 1 = 0$ has two real and equal roots. (2 marks)

8. If seven times the 7th term of an AP is equal to eleven times the 11th term then what will be its 18th term? (2 marks)

9. Solve the quadratic equation for x: $x^2 - 2ax - (4b^2 - a^2) = 0$ (2 marks)

10. ABCD is a trapezium with AB || DC. E and F are points on non-parallel sides AD and BC respectively such that EF is parallel to AB. Show that $\frac{AE}{ED} = \frac{BF}{FC}$. (2 marks)

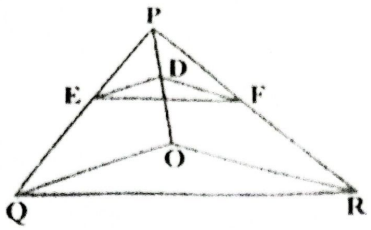


11. If the sum of the first p terms of an AP is the same as the sum of its first q term (where $p \neq q$) then show that sum of its first $(p+q)$ terms is zero. (3 marks)

12. If the roots of the quadratic equation $(a-b)x^2 + (b-c)x + (c-a) = 0$ are equal, prove that $2a = b + c$. (3 marks)

13. The sum of the first six terms of an arithmetic progression is 42. The ratio of the 10th term to the 30th term is 1 : 3. Calculate the first and the thirteenth terms of the AP. (3 marks)

14. In the given figure, DE || OQ and DF || OR. Show that EF || QR. (3 marks)



SECTION-C

CASE STUDY- BASED QUESTION

15. Jessica is arranging soda cans in a triangular display for a promotional event. The display is designed so that the top row contains 3 cans, the second row contains 6 cans, the third row contains 9 cans, and the number of cans increases uniformly from one row to the next.

Based on the above information, answer the following questions.

3, 6, 9 . . . 273,

(i) Write the number of cans in each row from the 1st row to the 10th row. (1 mark)

(ii) If the cans are to be stacked 47 rows high, how many cans will it take to build the display? (1 mark)

(iii) If Jessica has 273 cans, what is the maximum number of complete rows she can arrange? (2 marks)

SECTION-D

A fast train takes 3 hours less than a slow train for a journey of 600 km. If the speed of the slow train is 10km/h less than that of the fast train, find the speed of each train. (5 marks)